

ONLINE DATA SHEET
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Photoelectric sensors
GR18S, Photoelectric retro-reflective sensor, Standard optics

GRL18SG-P233Z



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Model Name > GRL18SG-P233Z
Part No. > 1068113





Illustration may differ

At a glance

- Low-cost cylindrical M18 sensor with extra short housing
- Five different housing styles
- Variety of plastic and metal housing styles, with straight or right angle optics
- Bright and highly visible PinPoint-LED
- Potentiometer for adjustment of switching threshold (depending on type)
- Special flush type, one-piece metal housing
- Highly visible signal indicator LED
- IP 67 rating

Your benefits

- Space-saving solution due to short housing
- Flexible mounting options due to versatile housing styles
- Easy installation and precise detection due to PinPoint LED
- Reduced maintenance costs due to high tightening torque of single piece flush metal housing
- Rugged and reliable with proven SICK technology
- Highly visible signal indicator LED saves maintenance and commissioning time

Features

Sensor/detection principle:	Photoelectric retro-reflective sensor, Standard optics
Housing design (light emission):	Cylindrical, straight, fully flush
Optical axis:	axial, Fully flush
Sensing range max.:	0.03 m ... 7.2 m [1)]
Sensing range:	0.06 m ... 6 m [2)]
Type of light:	Visible red light
Light source:	PinPoint LED [3)]
Wave length:	650 nm
Adjustment:	Potentiometer, 270 °
Light spot size (distance):	Ø 175 mm (7 m)

1) 2) PL80A 3) Average service life of 100,000 h at T_A = +25 °C

Mechanics/electronics

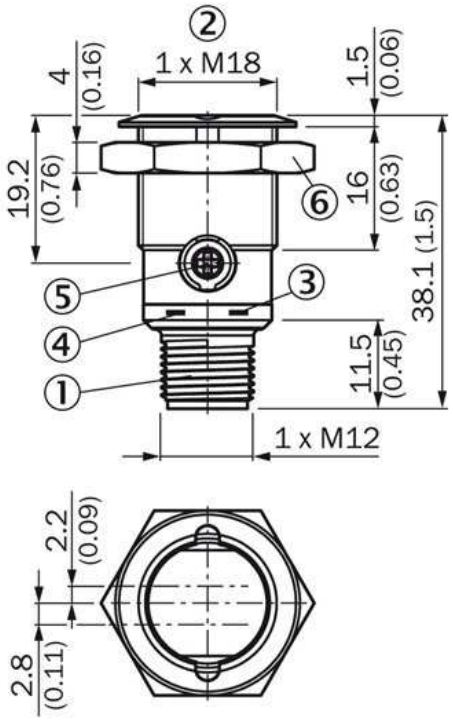
Supply voltage:	10 V DC ... 30 V DC [1)]
Residual ripple:	± 5 Vpp [2)]
Power consumption:	≤ 30 mA

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Output type:	PNP
Switching mode:	Light switching
Output current Imax.:	100 mA [3]
Response time:	< 500 µs [4]
Switching frequency:	1,000 Hz [5]
Electrical connection:	Connector M12, 3-pin
Circuit protection:::	A, B, D [6] [7] [8]
Protection class:	III
Polarisation filter:	✓
Enclosure rating:	IP 67
Items supplied:	Fastening nuts (2 x)
Special feature:	For transparent objects
Ambient operating temperature::	-25 °C ... +55 °C [9] [10]
Ambient storage temperature:	-40 °C ... +70 °C
UL File No.:	NRKH.E348498 & NRKH7.E348498
Signal voltage PNP HIGH/LOW:	VS - (≤ 3 V)/approx. 0 V
Housing material:	Metal

[1] Limit values, operation in short-circuit protected network max. 8 A [2] May not exceed or fall short of V_S tolerances [3] At Vs > 24 V or ambient temperature > 49 °C, I_A max = 50 mA [4] Signal transit time with resistive load [5] [6] A = V_S connections reverse-polarity protected [7] B = inputs and output reverse-polarity protected [8] D = outputs overcurrent and short-circuit protected [9] At U_v ≤24V and I_A 10) Temperature stability after adjustment +/-10°C

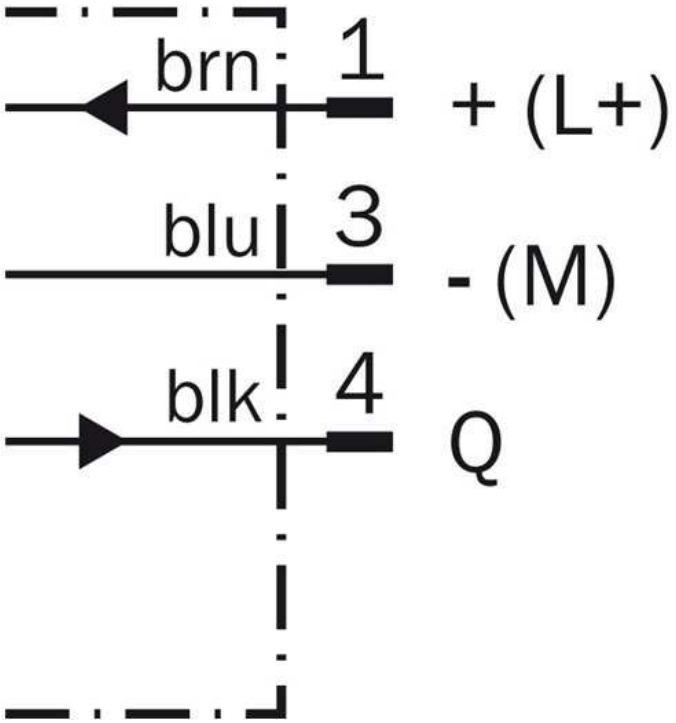
Dimensional drawing



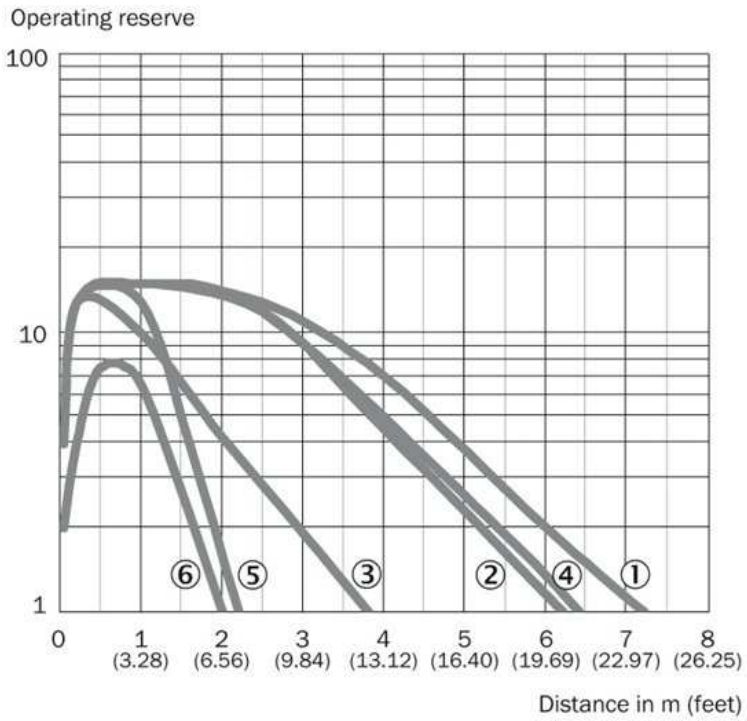
|1| Connector M12, 3-pin
|2| Threaded mounting hole M18 x 1
|3| LED indicator yellow
|4| LED indicator green
|5| Sensitivity control; Potentiometer 270°
|6| fastening nut; 24 mm hex, metal

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Connection diagram



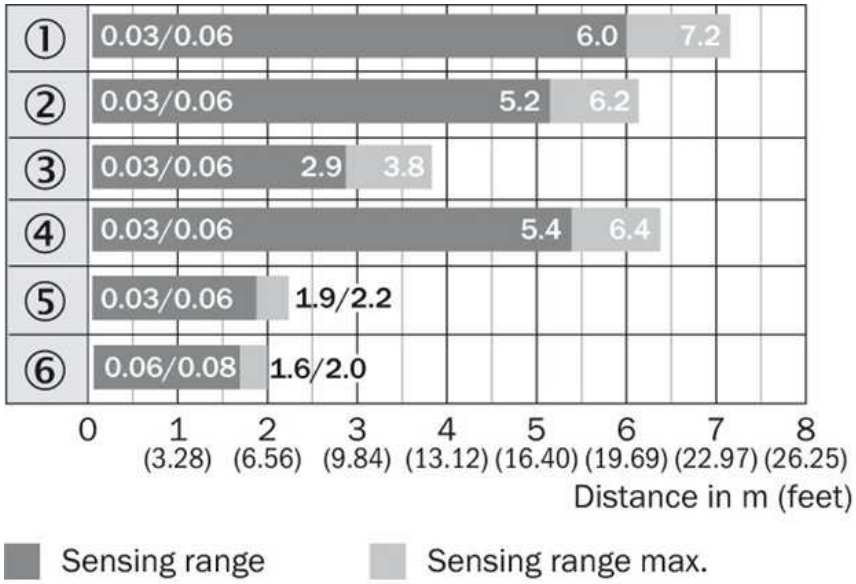
Characteristic curve



|1| Reflector type PL80A
|2| Reflector type PL40A
|3| Reflector type PL20A
|4| Reflector type P205
|5| Reflector type PL22-2
|6| Reflective tape REF-Plus 3436

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Sensing range diagram

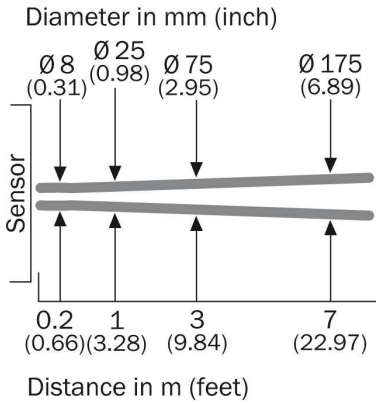


|1| Reflector type PL80A
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|3| Reflector type PL20A
|4| Reflector type P205
|5| Reflector type PL22-2
|6| Reflective tape REF-Plus 3436

Connection type



Light spot size



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